

LISTING OF THE CLAIMS

A complete listing of the claims is provided below. This listing of claims will replace all prior versions and listings of claims in the application.

1. (Cancelled)

2. (Cancelled)

3. (Cancelled)

4. (Cancelled)

5. (Cancelled)

6. (Cancelled)

7. (Cancelled)

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9. (Cancelled)

10. (Cancelled)

11. (Cancelled)

12. (Cancelled)

13. (Cancelled)

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18. (Cancelled)

19. (Cancelled)

20. (Cancelled)

21. (Cancelled)

22. (Cancelled)

23. (Cancelled)

24. (Cancelled)

25. (Cancelled)

26. (Cancelled)

27. (Cancelled)

28. (Cancelled)

29. (Cancelled)

30. (Cancelled)

31. (Cancelled)

32. (Cancelled)

33. (New) An apparatus for liquid-liquid extraction configured to accommodate at least a first, organic, liquid phase and a second, aqueous, phase, the apparatus comprising:

a container having a bottom container wall, a container end, with the second container end having a rear container end wall, wherein the container is adapted for material flow generally in a main flow direction from the first container end toward the second container end;

a settler compartment provided as part of the container and adjacent the container end of the container;

a first, organic phase, weir for organic phase material provided as part of the settler compartment; and

a second, aqueous phase, weir for aqueous phase material provided as part of the settler compartment, wherein the second, aqueous, weir is defined at one end thereof by the rear container end wall, and the second, aqueous, weir comprises:

a first partition having a lower first partition end connected to the bottom container wall, and the first partition projecting upwardly from the bottom container wall and spaced apart from the rear container end wall by a first distance;

a second partition having a lower second partition end spaced above the bottom container wall, and the second partition projecting upwardly and spaced apart from the rear container end wall by second distance greater than the first distance; and

a third partition having a lower third partition end connected to the bottom container wall, and the third partition projecting upwardly from the bottom container wall and spaced apart from the rear container end wall by a third distance, wherein the first partition has a height that is less than a height of the second partition, and wherein the third partition has a height that is less than the height of the first and second partitions, respectively, and wherein the

second, aqueous, weir including the partitions, define a flow path for the aqueous phase material;
and

wherein the first, organic phase, weir comprises:

a first organic weir wall having a bottom end spaced above the bottom container wall and extending upwardly, with the first organic weir wall being spaced from the rear container end wall by a fourth distance greater than third distance, and wherein the first organic weir wall has a height greater than the heights of each of the first, second and third partitions;

a first organic weir bottom wall connected at a point of connection to the bottom end of the first organic weir wall, and angling upward therefrom in the direction opposite to the main flow direction; and

a second organic weir wall projecting upwardly from the angled first organic weir bottom wall, wherein the second organic weir wall is spaced from the rear container end wall by a fifth distance greater than the fourth distance, and wherein the second organic weir wall has a height less than the height of the first organic weir wall.

34. (New) The apparatus according to claim 33, further comprising a pivotally adjustable lip provided at the top of the first partition to direct flow over the top of the first partition.

35. (New) The apparatus according to claim 33, further comprising a vertically adjustable lip located above the second organic weir wall and movable in a direction parallel with the second organic weir wall, and spaced from the second organic weir wall to define an organic phase material inlet for organic phase material between the second organic weir wall and the vertically adjustable lip into the first, organic phase, weir.

36. (New) The apparatus according to claim 34, further comprising a vertically adjustable lip located above the second organic weir wall and movable in a direction parallel with the second organic weir wall, and spaced from the second organic weir wall to form an organic phase material inlet for organic phase material between the second organic weir wall and the vertically adjustable lip and into the first, organic phase, weir.

37. (New) The apparatus according to claim 33, wherein the point of connection of the first organic weir wall and the organic weir bottom wall is spaced above the container bottom wall to form an aqueous phase material inlet for aqueous phase material into the second, aqueous phase, weir.

38. (New) The apparatus according to claim 33, further comprising an inclined plate located generally proximate the top of the second organic weir wall, and extending upwardly at an angle with respect to the second organic weir wall and towards the first organic weir wall.

39. (New) The apparatus according to claim 34, further comprising an inclined plate located generally proximate the top of the second organic weir wall, and extending upwardly at an angle with respect to the second organic weir wall and towards the first organic weir wall.

40. (New) The apparatus according to claim 35, further comprising an inclined plate located generally proximate the top of the second organic weir wall, and extending upwardly at an angle with respect to the second organic weir wall and towards the first organic weir wall.

41. (New) The apparatus according to claim 33, further comprising a lip plate having a generally L-shaped cross section disposed adjacent the point of connection of the first organic weir wall and the organic weir bottom wall, and having a portion extending generally downwardly and a portion extending generally in a direction opposite to the main flow direction, wherein the lip plate is spaced above the bottom container wall of the container.

42. (New) The apparatus according to claim 34, further comprising a lip plate having a generally L-shaped cross section disposed adjacent the point of connection of the first organic weir wall and the organic weir bottom wall, and having a portion extending generally downwardly and a portion extending generally in a direction opposite to the main flow direction, wherein the lip plate is spaced above the bottom container wall of the container.

43. (New) The apparatus according to claim 37, further comprising a lip plate having a generally L-shaped cross section disposed adjacent the point of connection of the first organic weir wall and the organic weir bottom wall, and having a portion extending generally downwardly and a portion extending generally in a direction opposite to the main flow direction, wherein the lip plate is spaced above the bottom container wall of the container.

44. (New) The apparatus according to claim 38, further comprising a lip plate having a generally L-shaped cross section disposed adjacent the point of connection of the first organic weir wall and the organic weir bottom wall, and having a portion extending generally

downwardly and a portion extending generally in a direction opposite to the flow direction, wherein the lip plate is spaced above the bottom wall of the container.

45. (New) The apparatus according to claim 33, further comprising a material outlet disposed in the bottom wall in a location in between the rear container end wall and the first partition.

46. (New) The apparatus according to claim 33, further comprising a mixer compartment.

47. (New) An apparatus for liquid-liquid extraction configured to accommodate at least a first, organic, liquid phase and a second, aqueous, phase, the apparatus comprising:

a container having a bottom container wall, a container end, with the second container end having a rear container end wall, wherein the container is adapted for material flow generally in a main flow direction from the first container end toward the second container end;

a settler compartment provided as part of the container and adjacent the container end of the container;

a first, organic phase, weir for organic phase material provided as part of the settler compartment; and

a second, aqueous phase, weir for aqueous phase material provided as part of the settler compartment, wherein the second, aqueous, weir is defined at one end thereof by the rear container end wall, and the second, aqueous, weir comprises:

a first partition having a lower first partition end connected to the bottom container wall, and the first partition projecting upwardly from the bottom container wall and spaced apart from the rear container end wall by a first distance;

a second partition having a lower second partition end spaced above the bottom container wall, and the second partition projecting upwardly and spaced apart from the rear container end wall by second distance greater than the first distance; and

a third partition having a lower third partition end connected to the bottom container wall, and the third partition projecting upwardly from the bottom container wall and spaced apart from the rear container end wall by a third distance, wherein the first partition has a height that is less than a height of the second partition, and wherein the third partition has a height that is less than the height of the first and second partitions, respectively, and wherein the second, aqueous, weir including the partitions, define a flow path for the aqueous phase material; and

wherein the first, organic phase, weir comprises:

a first organic weir wall having a bottom end spaced above the bottom container wall and extending upwardly, with the first organic weir wall being spaced from the rear container end wall by a fourth distance greater than third distance, and wherein the first organic weir wall has a height greater than the heights of each of the first, second and third partitions;

a first organic weir bottom wall connected at a point of connection to the bottom end of the first organic weir wall, and angling upward therefrom in the direction opposite to the main flow direction; and

a second organic weir wall projecting upwardly from the angled organic weir bottom wall, wherein the second organic weir wall is spaced from the rear container end wall by

a fifth distance greater than the fourth distance, and wherein the second organic weir wall has a height less than the height of the first organic weir wall; and

further comprising:

a pivotally adjustable lip provided at the top of the first partition to direct flow over the top of the first partition;

a vertically adjustable lip located above the second organic weir wall and movable in a direction parallel with the second organic weir wall, and spaced from the second organic weir wall to form an organic phase material inlet for organic phase material between the second organic weir wall and the vertically adjustable lip and into the first, organic phase, weir;

an inclined plate located generally proximate the top of the second organic weir wall, and extending upwardly at an angle with respect to the second organic weir wall and towards the first organic weir wall; and

a lip plate having a generally L-shaped cross section disposed adjacent the point of connection of the first organic weir wall and the organic weir bottom wall, and having a portion extending generally downwardly and a portion extending generally in a direction opposite to the main flow direction, wherein the lip plate is spaced above the bottom container wall of the container,

wherein the point of connection of the first organic weir wall and the organic weir bottom wall is spaced above the container bottom wall to form an aqueous phase material inlet for aqueous phase material into the second, aqueous phase, weir.

48. (New) The apparatus according to claim 47, further comprising a material outlet disposed in the bottom wall in a location in between the rear container end wall and the first partition.

49. (New) The apparatus according to claim 47, further comprising a mixer compartment.